



Management of Waste Dental Amalgam

FACT SHEET 37-004-1010

1. BACKGROUND. Waste amalgam consists of old amalgam and pieces of fresh amalgam from procedures used to replace deteriorated fillings. This waste stream is not classified as an infectious waste. Extracted teeth with amalgam fillings will also be addressed in this paper.

2. COMPOSITION. The proportion of metals in amalgam varies with manufacturers and the specific use in patients. The ratio of metals has also varied over time. In general terms, the amalgam alloy is a mixture of several metals: silver, tin, and copper. Copper amounts range from 6 to nearly 20 percent. The silver and tin components are in approximate equal proportions to each other so as to make up 100 percent of the alloy. Most current alloys contain about 12 percent copper. The amalgam itself is an intermetallic compound comprised of equal proportions by weight of the alloy and mercury; this fresh compound is mixed in a special dental shaker.

When the dentist compresses the fresh amalgam into the prepared cavity, small pieces of excess amalgam fall into the mouth cavity during compaction of the amalgam. More amalgam drops into the mouth both during the removal of old deteriorated fillings and when the dentist is putting the final shape on the new filling. These bits and pieces of old and new amalgam are what the suction tubes in dental operatories pick up and keep in traps.

3. TESTS. The U.S. Army Public Health Command (USAPHC) has researched the sludges from Army sewage treatment plants for leachable levels of the EPA toxic heavy metals (which include mercury and silver). All the data reviewed are below the regulatory thresholds for the Toxic Characteristic Leachate Procedure (TCLP) test [Title 40 Code of Federal Regulations (CFR), Part 261.24]. USAPHC conducted TCLP testing on a number of different amalgam samples under different scenarios. Results show that the samples did not always fall below the regulatory thresholds stated in 40 CFR 261.24. Due to the variability of this waste stream, dry amalgam waste should be turned in to the Defense Reutilization and Marketing Office (DRMO) as a hazardous waste.

4. DISPOSAL. At routine intervals, the traps need to be cleaned out. The amalgam solids found in the traps, along with any excess amalgam, should be collected in a central place within the dental clinic and managed as a hazardous waste. If there are several operatories in one room, collect the amalgam in a central location within the room and manage it as hazardous waste. The centralized collection locations should be managed as Satellite Accumulation Points (SAPs). The Preventive Medicine Environmental Science and Engineering Officer (ESEO) and/or installation environmental office should be consulted with regard to the placement and management of the SAP(s) and the turn-in of the amalgam.

Extracted teeth that have amalgam in them have been tested by the USAPHC and found to be non-hazardous according to the TCLP test. Extracted teeth with amalgam may be disposed of by either placing them into a sharps container as regulated medical waste or by managing them as hazardous waste if dictated by local policy. The DRMO regulations allow for this waste stream to be managed in this manner. DRMO has stipulated, however, that the teeth must be “certified” non-infectious (contact your DRMO for specific hazardous waste turn-in paper work guidance).

5. RECYCLING. Several states now require dental amalgam to be recycled specifically for the mercury content. Should you wish to start a recycling program for your amalgam waste, please consider the following factors: Is the company legitimately recycling the mercury (i.e., is it reclaiming the mercury and selling it back to industry) or if it doesn't do that itself is it sending it to a facility that does? Will the company provide you with proof that your mercury waste was recycled? You should also consult with your installation environmental office with regard as to how your mercury waste should be sent to the recycling company (i.e., no special requirements or on a hazardous waste manifest). USAPHC has vetted two mercury retort facilities that retort mercury waste and sell the reclaimed mercury back to industry. Please use the contact information below for more information regarding the retort facilities.

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